

# South Fork Salmon River Subbasin Assessment

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**May 29, 2002**

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## Abbreviations, Acronyms, and Symbols

<b>303(d)</b>	Refers to section 303 subsection (d) of the Clean Water Act, or a list of impaired water bodies required by this section	<b>F</b>	Fahrenheit
<b>§</b>	Section (usually a section of federal or state rules or statutes)	<b>FPA</b>	Idaho Forest Practices Act
<b>BAG</b>	Basin Advisory Group	<b>FWS</b>	U.S. Fish and Wildlife Service
<b>BLM</b>	United States Bureau of Land Management	<b>GIS</b>	Geographical Information Systems
<b>BMP</b>	best management practice	<b>HUC</b>	Hydrologic Unit Code
<b>BURP</b>	Beneficial Use Reconnaissance Program	<b>I.C.</b>	Idaho Code
<b>C</b>	Celsius	<b>IDAPA</b>	Refers to citations of Idaho administrative rules
<b>CFR</b>	Code of Federal Regulations (refers to citations in the federal administrative rules)	<b>IDFG</b>	Idaho Department of Fish and Game
<b>cfs</b>	cubic feet per second	<b>IDEQ</b>	Idaho Department of Environmental Quality
<b>CW</b>	cold water	<b>IDL</b>	Idaho Department of Lands
<b>CWA</b>	Clean Water Act	<b>IDWR</b>	Idaho Department of Water Resources
<b>DEQ</b>	Idaho Department of Environmental Quality	<b>km</b>	kilometer
<b>DO</b>	dissolved oxygen	<b>LA</b>	load allocation
<b>DWS</b>	domestic water supply	<b>LC</b>	load capacity
<b>EPA</b>	United States Environmental Protection Agency	<b>m</b>	meter
<b>ESA</b>	Endangered Species Act	<b>mi</b>	mile
		<b>mi<sup>2</sup></b>	square miles
		<b>MBI</b>	macroinvertebrate index
		<b>mg/l</b>	milligrams per liter

<b>MOS</b>	margin of safety	<b>WBID</b>	water body identification number
<b>NA</b>	not assessed	<b>WLA</b>	waste load allocation
<b>PCR</b>	primary contact recreation	<b>WQLS</b>	water quality limited segment
<b>ppm</b>	part(s) per million	<b>WQMP</b>	water quality management plan
<b>NPDES</b>	National Pollutant Discharge Elimination System	<b>WQS</b>	water quality standard
<b>NRCS</b>	Natural Resources Conservation Service	<b>YOY</b>	Young of Year (fish)
<b>NTU</b>	nephelometric turbidity unit		
<b>ORW</b>	Outstanding Resource Water		
<b>QA</b>	quality assurance		
<b>QC</b>	quality control		
<b>SBA</b>	subbasin assessment		
<b>SCR</b>	secondary contact recreation		
<b>SS</b>	salmonid spawning		
<b>TES</b>	Threatened, Endangered or Sensitive species		
<b>TMDL</b>	total maximum daily load		
<b>USDA</b>	United States Department of Agriculture		
<b>USFS</b>	United States Forest Service		
<b>USGS</b>	United States Geological Survey		
<b>WAG</b>	Watershed Advisory Group		
<b>WBAG</b>	<i>Water Body Assessment Guidance</i>		

## Executive Summary

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The federal Clean Water Act (CWA) requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 USC § 1251.101). States and tribes, pursuant to section 303 of the CWA are to adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible. Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop a total maximum daily load (TMDL) for the pollutants, set at a level to achieve water quality standards. This document addresses the water bodies in the South Fork Salmon River Subbasin that have been placed on what is known as the "303(d) list."

This subbasin assessment has been developed to comply with Idaho's TMDL schedule. This assessment describes the physical, biological, and cultural setting; water quality status; pollutant sources; and recent pollution control actions in the South Fork Salmon River Subbasin located in southeast Idaho. The subbasin assessment is an important first step in determining whether a TMDL is necessary. The starting point for this assessment was Idaho's current 303(d) list of water quality limited water bodies. Eight streams in the South Fork Salmon River Subbasin are listed on this list. The subbasin assessment examines the current status of 303(d) listed waters, and defines the extent of impairment and causes of water quality limitation throughout the subbasin (Table 1). The loading analysis quantifies pollutant sources and allocates responsibility for load reductions needed to return listed waters to a condition of meeting water quality standards.

The South Fork Salmon River (SF Salmon) is a tributary to the Salmon River in central Idaho. Located east of Cascade, ID and McCall, ID, the SF Salmon joins the main Salmon River downstream of the confluence with the Middle Fork Salmon River, a predominately unmanaged subbasin which drains the Frank Church - River of No Return (FC-RNR) Wilderness (Figure 1). The northeast portion of the SF Salmon Subbasin is located within the boundaries of the FC-RNR Wilderness. Current land uses include recreation, timber harvest, mining, and grazing. Prior to 1831, land use in the sub-basin was by the Nez Perce and Shoshone Bannock tribes for hunting, gathering, fishing and spiritual activities.

The SF Salmon River system maintains nineteen fish species: three anadromous, ten native residents and six introduced. This Subbasin plays a key role for Chinook salmon, steelhead, Bull Trout and westslope cutthroat trout, which are all Threatened, Endangered or Sensitive (TES) species under the Endangered Species Act (ESA).

The SF Salmon Subbasin affords recreational opportunities such as hunting, fishing, berry and mushroom picking, sightseeing, camping, rafting, off road recreational vehicle use and hiking. Recreation rates have stayed stable, increasing slightly over the last 10 years (USDA Forest Service, 2000). In addition, there are resorts, lodges and summer homes in the Yellow

Pine, Johnson Creek, Secesh, Warm Lake, Warren and Burgdorf areas. Eleven different outfitters operate in the Subbasin offering activities such as horse packing, fishing and hunting (USDA Forest Service, 2000).

Timber harvest has occurred historically, but currently is not widespread. Historical timber harvest activity took place from 1950 to 1965 in the Subbasin. An estimated 147 million board feet were removed at that time. Concerns over sedimentation and fish habitat resulted in the Forest Service reducing all land disturbing activities in the upper SF Salmon drainage since 1965. While the reductions affect the amount of timber harvest within the subbasin, it is the roads built during harvest activities and retained for recreation and fire suppression that have been the dominant sources of sediment in the SF Salmon Subbasin.

Mining has played a significant role in the human history of the SF Salmon Subbasin. The alluvial deposits in and along the SF Salmon and the East Fork South Fork (EFSF) Salmon Rivers, the Upper Secesh River and Johnson Creek were explored and mined for placer gold during the latter portion of the nineteenth century and into recent years. Most of the activity was limited in scale. The most extensive mining in the Subbasin occurred in the Upper EFSF Salmon River at the Stibnite mine site. Stibnite is now closed and has been reclaimed through an administrative order of consent between Mobil Company, Idaho Department of Lands (IDL), Idaho Department of Environmental Quality (IDEQ), United States Environmental Protection Agency (USEPA) and the United States Forest Service (Griner and Woodward-Cyde, 2000).

Currently, grazing plays a very minor role in the SF Salmon Subbasin and is associated with permitted outfitter and guide activity on National Forest System lands. Limited grazing occurs on private land near Yellow Pine.

The approved 1998 303(d) list for the State of Idaho included eight water bodies located within the SF Salmon Subbasin. These water bodies include the SF Salmon River, the EFSF Salmon River, Johnson Creek, Rice Creek, Dollar Creek, Trail Creek, Trout Creek, and Tyndall Creek (i.e. upper Johnson Creek). The pollutant of concern is sediment for all of the listed waterbodies and metals for the East Fork of the SF Salmon. None of these water bodies had a full water body assessment completed prior to the submittal of the 1998 303(d) list. Therefore, this Subbasin assessment (SBA) is the first time the support status and attainment of water quality standards has been comprehensively reviewed.

The Idaho Administrative Procedures Act (IDAPA) 58.01.02.053 specifies that, when assessing whether a water body fully supports designated and existing beneficial uses, the IDEQ is to determine whether all of the applicable water quality standards are being achieved in addition to whether a healthy, balanced biological community is present. Currently, the initial screen by the IDEQ to determine whether a water body violates current water quality standards is based on available monitoring data for the numeric water quality standards and biologic life indicators within the water body. The 1996 Water Body Assessment protocol is used here to determine the current beneficial use support status for these water bodies. The IDEQ and the USEPA will use the results of the water body assessments contained within

this document to update Idaho's 303(d) list. Also, under the current schedule, the State of Idaho is to re-visit, and possibly revise, the 1991 sediment TMDL approved by the USEPA.

The review of the available ambient numeric water quality monitoring data shows attainment of current water quality criteria for sediment and metals. Review of the biological data and sediment impacts to aquatic habitat indicates that the historical habitat conditions within the SF Salmon Subbasin are in the process of re-establishing. These results of the SF Salmon SBA indicate that the listed water bodies currently meet the Idaho water quality standards for sediment and metals. The TMDL approved by the USEPA in 1991 included two surrogate targets, percent depth fines and cobble embeddedness. Data included in the document suggest that the watershed has attained the target and has an improving trend for cobble embeddedness, but has not attained the target for percent depth fines. Therefore, the IDEQ is removing all water bodies currently listed for sediment and metals from the Idaho 303(d) list with the exception of the mainstem South Fork Salmon River.

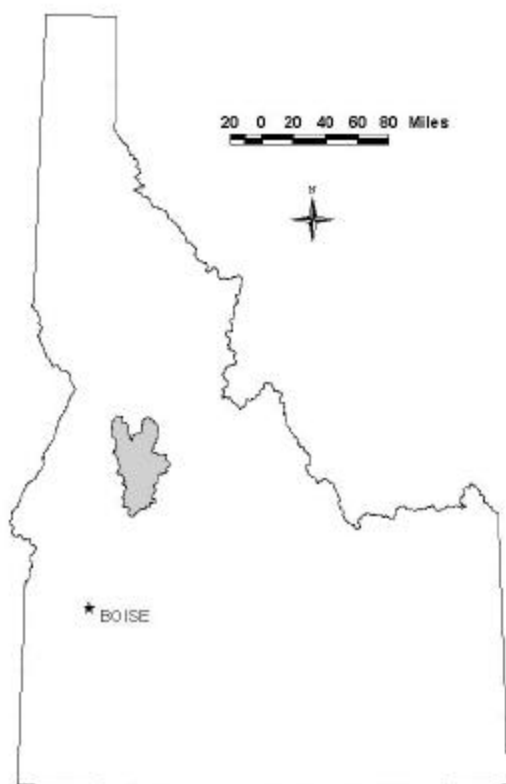
This remaining uncertainty, combined with the highly valued TES beneficial uses, suggests that the 1991 TMDL should continue to be implemented. The SF Salmon Subbasin must be managed so that the existing roads and sediment sources do not cause water quality violations in the future. Therefore, the IDEQ will continue to work with the designated land management agencies to ensure water quality standards are attained and beneficial uses are supported in the future. Additional monitoring in the subbasin will occur over the next two years. The IDEQ will begin to review and assess all data collected during this time period and report on the additional data by December 31, 2002.

Review of the available stream temperature data, potential management impacts to stream temperature, and riparian conditions indicate that the Idaho water quality standards for stream temperature is not violated. However, it was found that the federal bull trout temperature standards for these same streams are exceeded. Therefore, these water bodies are placed on the Idaho 303(d) list. The water bodies include: Trout Creek, Sand Creek, Rice Creek, Trail Creek, Warm Lake Creek, Johnson Creek, SF Salmon River, Tyndall Creek, Profile Creek, Buckhorn Creek, Lick Creek, Grouse Creek, and Elk Creek.

## Subbasin at a Glance

**Table 1. Subbasin Assessment at a Glance**

Hydrologic Unit Code	17060208
Assessed Water Bodies	Water Bodies 1 – 35 (according to the Idaho Water Body Identification system).
Beneficial Uses Present	Cold Water Biota, Salmonid Spawning, Primary Contact Recreation, Drinking Water Supply, and Special Resource Water
Pollutants Addressed	Turbidity, Sediment, and Metals
Land Uses	Forestry, Grazing, Recreation, Mining



**Figure 1. SF Salmon HUC Location Map**

### **Key Findings**

The 1996 Water Body Assessment protocol, plus other available data from cooperating agencies, is used here to determine the current beneficial use support status for these water bodies. The IDEQ and the USEPA will use the results of the water body assessments contained within this document to update Idaho's 303(d) list.

The review of the available ambient numeric water quality monitoring data shows attainment of water quality criteria for sediment and metals. Review of the biological data and sediment impacts to aquatic habitat indicates that the historical habitat conditions within SF Salmon Subbasin are in the process of re-establishing.

However, evidence remains that the existing road system contributes large quantities of sediment during storm events. These ongoing impacts to the water bodies, combined with the highly valued TES beneficial uses suggests that further implementation of the 1991 TMDL would be beneficial to prevent the existing roads and sediment sources from



impacting current water quality. Therefore, the IDEQ is recommending additional actions be taken by the designated land management agencies to ensure the current water quality is protected and beneficial uses are supported in the future.

All of the larger water bodies within the SF Salmon Subbasin (e.g. SF Salmon, EFSF Salmon, Johnson Creek, and the Secesh River) are designated as Special Resource Waters (SRWs). SRWs are “those specific segments or bodies of water which are recognized as needing intensive protection to preserve outstanding or unique characteristics or to maintain current beneficial uses (IDAPA 58.01.02.002.96)”. The State of Idaho Antidegradation Policy (IDAPA 58.01.02.051) for “high quality waters” also states that, “where the quality of the water exceeds levels necessary to support propagation of fish, ...that quality shall be maintained and protected.”

Review of available ambient stream temperature data and site conditions indicates that the federal standards for bull trout are exceeded. Therefore, the IDEQ will place several water bodies on the State of Idaho 303(d) list for temperature (Table 27).

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